

Application Serial No.: 10/609,628
Attorney Docket No.: 57761.000188

REMARKS

Claims 1-20 are pending in the application. By this Amendment, claim1 is amended. Reconsideration and allowance in view of the foregoing amendment and following remarks are respectfully requested. Applicant believes that the application is now in condition for allowance and notice thereof is respectfully requested.

The objection to claim 1 in the Office Action is noted. Claim 1 is hereby amended to correct the asserted minor deficiency.

I. The 35 U.S.C. §102(e) Rejection Based on Stack

In the Office Action, claims 1-2, 4-7, 9-12, 14-17 and 19-20 rejected under 35 U.S.C. 102(e) as being unpatentable by Stack et al (U.S. PGPUB 2004/0102864). This rejection is respectfully traversed.

With reference to claim 1, the Office Action asserts that Stack teaches a system for analyzing an anomalous condition, comprising a process for producing a product, including plural subprocesses for performing operations on the product (Paragraph 0006, lines 13-16), wherein each subprocess includes at least one actuator for controlling the respective subprocess (Paragraph 0059), wherein each subprocess includes at least one sensor for measuring information pertaining to the status of the respective subprocess, and for generating an output based thereon (Paragraph 0006, lines 13-16 and Paragraph 0033); a parameter extractor for, for each of the subprocesses, receiving the output from the at least one sensor, and for generating at least one representative value that is characteristic of a pattern expressed in the output, the parameter extractor thus generating a plurality of representative values for the process as a whole (Paragraph 0036); a knowledge base for storing data including a plurality of representative values, and also including information which maps the representative values to associated anomalous conditions (Paragraph 0041),

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an analyzer for analyzing the plurality of representative values output from the parameter extractor with respect to the data stored in the knowledge base, and for generating a diagnostic result which diagnoses an anomalous condition in the process, and also identifies at least one of the subprocesses which has caused the anomalous condition (Paragraph 0043), and control logic for using the diagnostic result to affect corrective action to the at least one subprocess which has caused the anomalous condition by adjusting at least one actuator that controls the at least one subprocess (Paragraph 0053).

It is respectfully submitted that Stack fails to teach each and every feature of the claimed invention, as recited in claim 1, for example.

Claim 1 in particular recites a system for analyzing an anomalous condition, comprising a process for producing a product, including plural subprocesses for performing operations on the product, wherein each subprocess includes at least one actuator for controlling the respective subprocess, wherein each subprocess includes at least one sensor for measuring information pertaining to the status of the respective subprocess, and for generating an output based thereon. The claimed process is claimed in conjunction with a parameter extractor for, for each of the subprocesses, receiving the output from the at least one sensor, and for generating at least one representative value that is characteristic of a pattern expressed in the output, the parameter extractor thus generating a plurality of representative values for the process as a whole. Claim 1 further recites a knowledge base for storing data including the plurality of representative values, and also including information which maps the representative values to associated anomalous conditions.

In particular, it is submitted that Stack fails to teach or suggest the features relating to "generating at least one representative value that is characteristic of a pattern expressed in the output", and the interrelationship thereof with the other claimed features.

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Stack relates to a system and method for high speed control and rejection of out-of-specification products, such as cigarettes, in a manufacturing process. In the Abstract, Stack describes that sensors are placed at strategic locations along a production line, with the signals from the sensors being directed to a high speed processor, with multiple sensor inputs and controlled by software algorithms to process the sensor signals and to direct control signals to the production line equipment. Control signals can both eject non-conforming products and also modify machine settings to produce a product in closer compliance with specifications.

The Office Action references paragraph 36 of Stack. Therein, Stack describes that in addition to the preferred rejection control feature, exemplary embodiments can also provide machine control of the machine 200 based on signals received by one or more sensors, such as those located at positions 112, 210, and 212. Stack teaches that for example, an algorithm on the processor 201 can receive the weight measurement signals from sensor 112 and can analyze a trend in individual weight measurements to determine if the ecreteur wheel 114 needs adjustment or replacement. Stack explains that if the weight measurements are regularly too high, a control signal can be sent from the processor 201 across the communication path 202 to the machine 200 to instruct a gear box to raise the ecreteur wheel 114 to scrape more tobacco off the continuous rod. If, on the other hand, the measurement signals from sensor 112 to the processor 201 indicate that every sixth cigarette rod is too heavy in the middle of the cigarette rod, and if the scalloped ecreteur wheel 114 provides for the scraping of the equivalent of six cigarette rods during one revolution of the wheel, a message can be displayed on a screen or graphical user interface 204 or 206 to instruct the operator to replace the ecreteur wheel as having at least one improperly shaped edge.

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However, it is respectfully submitted that these teachings of Stack fail to teach the claimed invention as recited in claim 1, and in particular, the features of claim 1 relating to the parameter extractor and the generation of the at least one representative value.

Of the above teachings, Applicant notes in particular Stack's description that an algorithm on the processor 201 can receive the weight measurement signals from sensor 112 and can analyze a trend in individual weight measurements to determine if the ecreteur wheel 114 needs adjustment or replacement.

Applicant of course acknowledges that Stack teaches trend analysis. However, claim 1 recites the parameter extractor for, for each of the subprocesses, receiving the output from the at least one sensor, and for generating at least one representative value that is characteristic of a pattern expressed in the output, the parameter extractor thus generating a plurality of representative values for the process as a whole. Accordingly, claim 1 includes the feature of the parameter extractor generating at least one representative value that is characteristic of a pattern expressed in the output.

Accordingly, claim 1 recites an association between the representative value and a pattern. Claim 1 then recites further manipulation of such representative value. That is, the representative values are then processed by the knowledge base and the analyzer, as claimed. In particular, it is this interrelationship that Stack fails to teach or suggest. Stack fails to teach or suggest these claimed features.

Further teachings of Stack that are noted in particular is paragraph 50. Therein, Stack describes that particular timing of events can trigger an analysis, e.g. such as the processing of a particular number of products. Further, it is noted that claim 1 of Stack talks to transmitting a sensor signal representative of the sensed condition to a central processor; comparing, at the central processor, the transmitted sensor signal against a standard

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associated with the sensed condition; and transmitting a control signal to a controller on the manufacturing device should the comparison against the standard indicate an out-of-standard condition. However, Applicant respectfully submits that this teaching too fails to suggest the specifics of claim 1.

Accordingly, it is respectfully submitted that claim 1 defines patentable subject matter for at least the reasons set forth above. Further, it is submitted that independent claims 6, 11, and 16 define patentable subject matter for reasons similar to those set forth with respect to claim 1.

Further, the various dependent claims define patentable subject matter based on their various dependencies on the independent claims, as well as the additional features such dependent claims recite. Withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

II. The 35 U.S.C. §103 Rejection

In the Office Action, claims 3, 8, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stack, further in view of Isobe et al (U.S. Pat 6,068,887).

The Office Action, referring to such claims, asserts that Stack teaches the above; but however, Stack does not explicitly teach that the process is for manufacturing metal products, and the process includes the following subprocesses: a hot rolling subprocess for reducing the thickness of the metal products in a heated state, a pickling subprocess for removing unwanted material from the metal products, a cold rolling subprocess for reducing the thickness of the metal products in a cold state using a plurality of rolling stands, and an annealing subprocess for heating and subsequently cooling the metal product. The Office Action then asserts that Isobe teaches a process for producing steel which utilizes hot rolling, pickling, cold rolling and annealing in order to produce the product (col. 1 lines 13-31). The

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Office Action concludes that therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize manufacturing metal products using the process taught by Isobe in the invention taught by Stack since the steps of hot rolling, pickling, cold rolling and annealing are well known in the art of producing steel sheets (Isobe, col. 1 lines 13-31), and since Stack teaches that exemplary embodiments of the invention can be implemented on any manufacturing devices (Stack, Paragraph 0029).

Applicant respectfully submits that Isobe fails to cure the deficiencies of Stack as discussed above. That is, even if it were obvious to somehow apply the teachings of Stack to the processes of Isobe, such modification of the applied art would still fail to teach or suggest the features as recited in claim 1 and the other independent claims.

Accordingly, since claims 3, 8, 13 and 18 variously depend on such independent claims, it is submitted that claims 3, 8, 13 and 18 define patentable subject matter in light of their dependencies, as well as the additional subject matter such dependent claims recite.

Withdrawal of the rejection under 35 U.S.C. §103 is respectfully submitted.

III. CONCLUSION

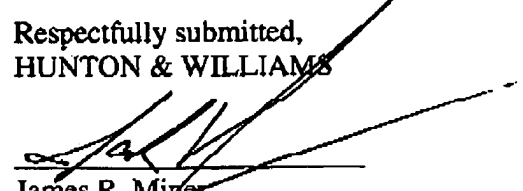
For at least the reasons outlined above, Applicant respectfully asserts that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

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For any fees due in connection with filing this Response the Commissioner is hereby
authorized to charge the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,
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